

The Claims:

The status of the claims is as follows:

1. (previously presented) A cobalt-chromium dental alloy comprising by weight percent:
about 60 to about 85% cobalt;
about 15 to about 30% chromium;
about 4 to about 20% manganese; and
about 1 to about 15% aluminum, indium, gallium, tin, or germanium, or mixture thereof; and
wherein the coefficient of thermal expansion at room temperature to about 500 °C is about 16 to about 18 x 10⁻⁶/°C.
2. (original) The cobalt-chromium alloy of claim 1 wherein aluminum is present in an amount of at least about 2%.
3. (original) The cobalt-chromium dental alloy of claim 1 further comprising:
up to about 20% iron, nickel, palladium, or platinum, or mixture thereof;
up to about 10% gold;
up to about 15% tantalum, niobium, molybdenum, tungsten, or vanadium or mixture thereof;
up to about 6% iridium, ruthenium, rhodium, titanium, silicon, or copper or mixture thereof; and
up to about 5% zirconium, hafnium, boron, yttrium, or a rare earth metal or mixture thereof.
4. (cancelled)
5. (original) The cobalt-chromium dental alloy of claim 1 having a Vickers Hardness of no greater than about 300 HV₅.

1

6. (original) A dental restoration comprising the cobalt-chromium alloy of claim 1.

7. (original) The dental restoration of claim 6 further comprising a high-expansion porcelain on the cobalt-chromium alloy.

8. (previously presented) The dental restoration of claim 6 wherein the dental restoration comprises a restoration selected from the group consisting of a crown, bridge, space maintainer, tooth replacement appliance, orthodontic retainer, denture, post, jacket, inlay, onlay, facing, veneer, facet, implant, abutment, splint, partial crown, teeth, cylinder, pin, connector or combination thereof.

9. (previously presented) A cobalt-chromium dental alloy comprising by weight percent:

about 65 to about 80% cobalt;

about 18 to about 25% chromium;

about 4 to about 10% manganese;

about 2 to about 10%, iron, nickel, palladium, or platinum, or mixture thereof;

about 1 to about 7% aluminum, indium, gallium, tin, or germanium, or mixture thereof;

about 1 to about 5% gold; and

about 0.1 to about 3% iridium, ruthenium, rhenium, titanium, silicon, or copper, or mixture thereof; and

wherein the coefficient of thermal expansion at room temperature to about 500 °C is about 16 to about $18 \times 10^{-6}/^{\circ}\text{C}$.

10. (original) The cobalt-chromium dental alloy of claim 9 further comprising:

up to about 5% tantalum, niobium, molybdenum, tungsten, or vanadium, or mixture thereof; and

up to about 1% zirconium, hafnium, boron, yttrium, or a rare earth metal, or

mixture thereof.

11. (cancelled)

12. (original) The cobalt-chromium dental alloy of claim 9 having a Vickers Hardness of no greater than about 300 HV₅.

13. (original) A dental restoration comprising the cobalt-chromium alloy of claim 9.

14. (original) The dental restoration of claim 13 further comprising a high-expansion porcelain on the cobalt-chromium alloy.

15. (previously presented) The dental restoration of claim 13 wherein the dental restoration comprises a restoration selected from the group consisting of a crown, bridge, space maintainer, tooth replacement appliance, orthodontic retainer, denture, post, jacket, inlay, onlay, facing, veneer, facet, implant, abutment, splint, partial crown, teeth, cylinder, pin, connector or combination thereof.